
**Adhesives — Determination of the
solubility of water-soluble or alkali-
soluble pressure-sensitive adhesives**

*Adhésifs — Détermination de la solubilité des adhésifs sensibles à la
pression, solubles dans l'eau ou dans les alcalis*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 25179:2010](https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010)

[https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-
d0b787a34eec/iso-25179-2010](https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010)



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 25179:2010

<https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2010

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Principle	1
4 Apparatus	1
5 Solutions and materials	5
6 Preparation of test specimens	5
7 Procedure	6
8 Expression of results	6
9 Test report	7
Annex A (informative) Report form	9

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 25179:2010

<https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010>

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 25179 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO 25179:2010

<https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010>

Adhesives — Determination of the solubility of water-soluble or alkali-soluble pressure-sensitive adhesives

SAFETY STATEMENT — Persons using this document should be familiar with normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory conditions.

It is recognized that some of the materials permitted in this document may have a negative environmental impact. As technological advances lead to more acceptable alternatives for such materials, they will be eliminated to the greatest extent possible.

At the end of the test, care should be taken to dispose of all waste in an appropriate manner in accordance with local regulations.

1 Scope

This International Standard specifies a test method for the determination of the solubility of a water-soluble pressure-sensitive adhesive in water or the solubility of an alkali-soluble pressure-sensitive adhesive in alkali by measuring the loss in mass of the adhesive when immersed in water or alkali. The solubility of the adhesive is one of the key factors in assessing the possibility of recycling products to which labels are fixed using a pressure-sensitive adhesive.

<https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010>

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

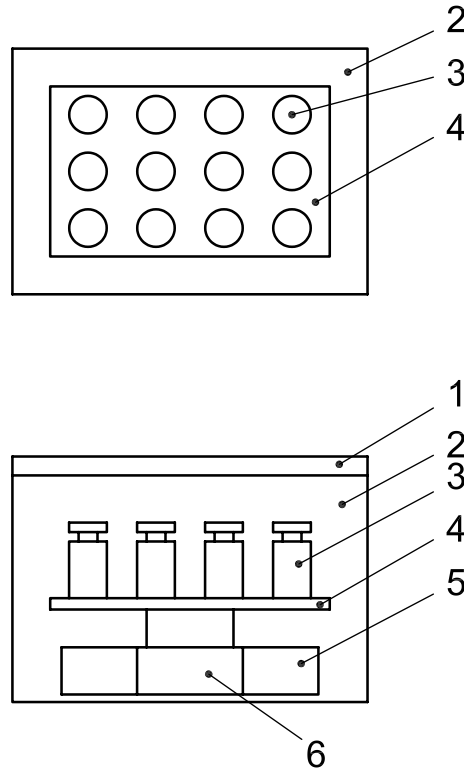
ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

3 Principle

This method measures the solubility of a water-soluble or an alkali-soluble adhesive, coated on kraft paper, as a function of time by measuring the loss in mass of an adhesive-coated test specimen after shaking the specimen in water or alkali solution.

4 Apparatus

4.1 Orbital shaker, enclosed in a chamber capable of being heated by air at a temperature in the range 40 °C to 80 °C, accurate to within ± 2 °C, and having a motor capable of producing a shaking speed of 10 r/min to 100 r/min, for shaking the bottles (4.2) containing the test specimens (see Figure 1).



iTeh STANDARD PREVIEW

Key

- | | | |
|------------------------|----------------|----------|
| 1 shaker chamber cover | 3 bottle | 5 heater |
| 2 shaker chamber | 4 shaker plate | 6 motor |

ISO 25179:2010
 Figure 1 — Example of a shaker
<https://standards.iteh.ai/catalog/standards/sist/b6c10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010>

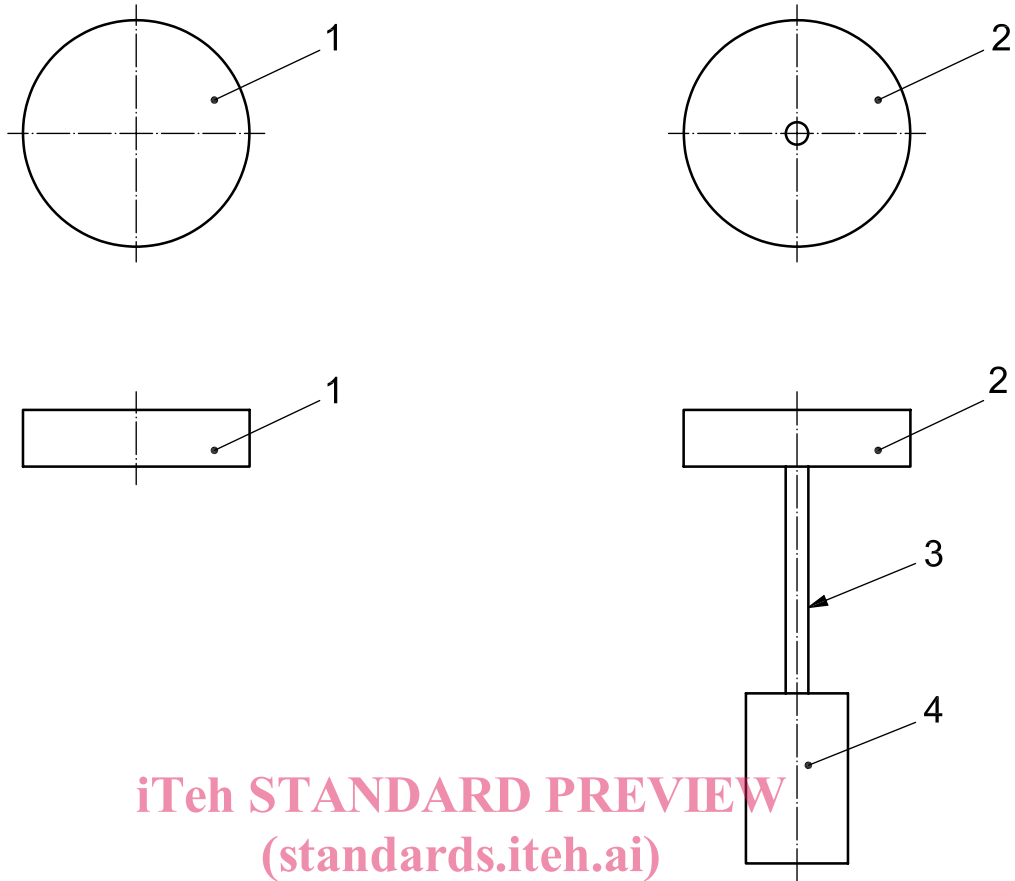
4.2 Bottles, made of glass, with a volume of 500 ml and capable of being sealed with a cap to prevent the escape of any vapour.

NOTE The method uses two types of bottle cap, an ordinary bottle cap and a prepared bottle cap (see Figure 2) to which the test specimen holder (see Figure 3) is connected.

4.3 Test specimen holder, comprising a cylindrical drum, two specimen-clamping bars and a connecting rod made of AISI 316 stainless steel, as shown in Figures 3, 4 and 5.

4.4 Drying oven, with forced-air convection, capable of being maintained at a temperature in the range from 50 °C to 120 °C to an accuracy of ±2 °C.

4.5 Balance, capable of weighing the test specimen substrate and the coated test specimen to an accuracy of 0,000 1 g.



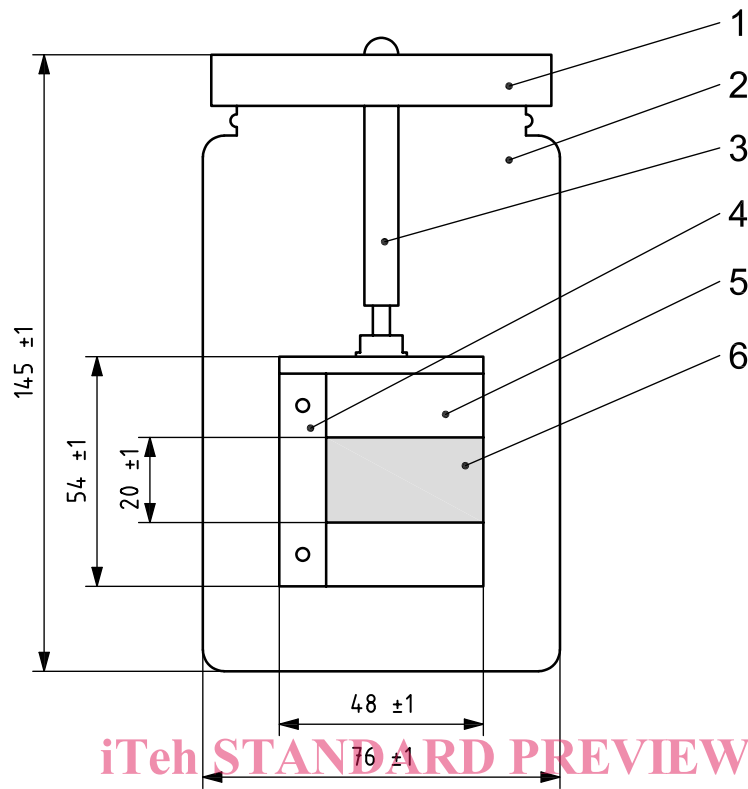
iTeh STANDARD PREVIEW
(standards.iteh.ai)

Key

- 1 ordinary bottle cap <https://standards.iteh.ai/catalog/standards/sist/6071-0524-49ee-ab0d-d0b787a34ee/iso-25179-2010>
 2 prepared bottle cap
 3 connecting rod
 4 cylindrical drum of test specimen holder

Figure 2 — Examples of ordinary and prepared bottle caps

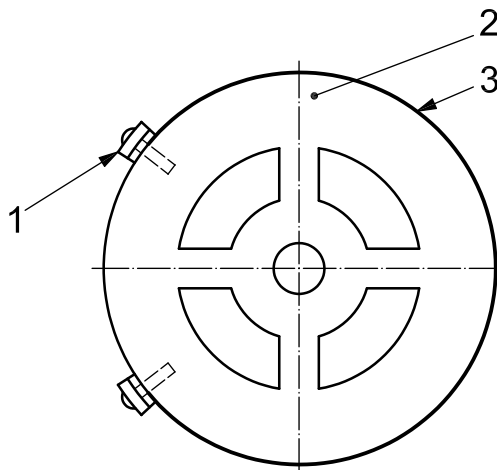
Dimensions in millimetres



Key

- 1 bottle cap
- 2 bottle
- 3 connecting rod
- 4 specimen-clamping bar
- 5 cylindrical drum of test specimen holder
- 6 test specimen

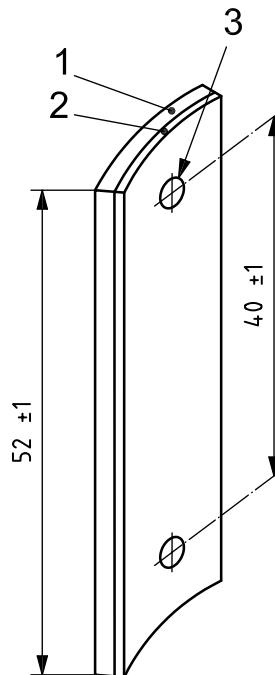
Figure 3 — Example of a bottle prepared for testing



Key

- 1 specimen-clamping bar
- 2 cylindrical drum
- 3 test specimen

Figure 4 — Example of a test specimen holder, viewed from above, showing the test specimen and the two specimen-clamping bars

**Key**

- 1 AISI 316 stainless steel, thickness 1,5 mm 3 fastening hole
 2 polytetrafluoroethylene (PTFE), thickness 1 mm

Figure 5 — Example of a specimen-clamping bar

ISO 25179:2010

5 Solutions and materials

<https://standards.iteh.ai/catalog/standards/sist/b8e10c7b-0524-49ee-ab0d-d0b787a34eec/iso-25179-2010>

5.1 Distilled or deionized water, for dissolving water-soluble adhesives.

5.2 Aqueous alkali solution, made by dissolving $(1 \pm 0,01)$ parts by mass of reagent-grade sodium hydroxide (NaOH) in (99 ± 1) parts by mass of water, for dissolving alkali-soluble adhesives.

5.3 Repulpable kraft paper, with a mass per unit area between 80 g/m^2 and 100 g/m^2 , for use as the test specimen substrate.

6 Preparation of test specimens

6.1 Cut from the kraft paper (5.3) a sheet measuring 400 mm in length and 300 mm in width.

6.2 Place the sheet on a clean glass plate and coat with the adhesive being tested, using a laboratory-scale coating machine to produce a wet-film thickness of about $40 \text{ }\mu\text{m}$.

6.3 Dry the coated sheet on the glass plate in the drying oven for 30 min at $80 \text{ }^\circ\text{C}$. Then remove the sheet from the drying oven and allow to cool to room temperature.

6.4 Remove the coated sheet from the glass plate and cut from it ten or more test specimens measuring 110 mm in length and 20 mm in width.

6.5 Draw lines across each test specimen at a distance of 5 mm from each end and condition the specimens using one of the sets of conditions specified in ISO 291.

6.6 Test specimens can also be prepared by cutting them from ready-made adhesive tape.